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**Items for discussion and decision: programme review:
education statistics**

Report of Statistics Canada on education statistics

Note by the Secretary-General

In accordance with a request of the Statistical Commission at its thirty-seventh session,** the Secretary-General has the honour to transmit the report of Statistics Canada on education statistics. The Commission is invited to express its views on the findings, conclusions and recommendations for future work in this area.

* E/CN.3/2007/1.

** See *Official Records of the Economic and Social Council, 2006, Supplement No. 4 (E/2006/24)*, chap. I.B.



Report of Statistics Canada on education statistics

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I. Mandate and approach

1. In December 2005 the United Nations Statistics Division asked Statistics Canada to undertake a review of educational statistics. This was to be the next in a series that includes service statistics (Australia, 2003) (E/CN.3/2003/12), social statistics (United Nations Statistics Division, 2004) (E/CN.3/2004/2), energy statistics (Norway, 2005) (E/CN.3/2005/3), and industrial statistics (Japan, 2006) (E/CN.3/2006/3). The very broad terms of reference are reflected in the questions that were asked: Are international agencies doing the right thing? Are there conceptual, methodological, definitional or dissemination issues that cause problems for users either in collection or use of the data? Are manuals and reference materials current? Are there comparability concerns? Could we comment on future directions? Is the world doing a good job in support of developing countries? The Statistics Division expressed the hope that the review would give direction on how an area of statistics should be further developed.

2. To deal with an international review of a field as broad as education, the reviewer leaned heavily on websites, e-mail exchanges, and secondary sources. The review has made no concerted attempt to look at education data from fields such as labour force, health, agriculture, and family statistics and at agencies such as ILO.

3. The review began with the same fundamental questions that need to be addressed at the beginning of any statistical programme: "what" is to be measured and "why". Once these policy and philosophical questions have been answered one can consider the "how" questions which involve basic processes of any statistical cycle from data standards through collection, quality, analysis and information development, storage, and dissemination, to user support. User support applies to each stage and includes statistical capacity-building, a fundamental consideration in an international review.

4. Given the breadth of the brief, and given that examinations of technical issues are available elsewhere, the review set out to identify major issues. Background material dealing with basic concepts, sources of educational data, and agencies and initiatives are presented in appendices.

5. Questions and issues appear in italics. Although suggestions are implicit in much of the report, major recommendations are provided in the final section dealing with conclusions and recommendations. Abbreviations used in the text are listed in annex IV.

II. Challenges

A. What gets measured — philosophy and goals

6. Ideally, a statistical programme is guided by a framework that can be related to goals that provide a clear understanding of what is to be measured and that have a philosophical basis. A framework highlights key factors affecting the subject and their relationships. Most importantly, a framework makes it possible to systematically assess whether the most important elements are being measured. Internationally in education, there is no single framework and the goals are

somewhat limited and may not be completely consistent with the international commissions that have provided a philosophical basis.

7. International philosophy is reflected in two major reports by UNESCO. Edgar Faure and Jacques Delors, respectively, chaired the commissions that prepared *Learning to be: the world of education today and tomorrow* in 1972, and *Learning: the treasure within* in 1998.

8. *Given the prominence of Learning to be and Learning: the treasure within, the goals for education could be reviewed to ensure they are consistent with the outlook of the reports. Given the time that has passed since their publication, consideration should be given to the need for an update.*

9. A framework for understanding a field of statistics is a conceptual tool or map which outlines a way of thinking about a field so that one is able to organize the concepts, make decisions about gaps and overlaps in data, and undertake analysis with a view of the entire field. A complete framework makes clear the context of existing and proposed work.

10. Although the elements of an international conceptual framework — such as “context, input, process, output, and outcomes”; and the OECD framework for data collection — are in general use, there is no generally accepted international framework.

11. *Given its importance for understanding a statistical programme, a conceptual framework for international education statistics would be useful. A country such as Australia, that already has a comprehensive framework, might lead this work.*

12. International goals can be found in documents published by both the United Nations and OECD. The United Nations goals are found in the Millennium Development Goals and EFA.

Millennium Development Goals

13. At the United Nations Millennium Summit in 2000, world leaders agreed to eight goals to be achieved by 2015. To monitor progress, each goal has targets and each target has indicators that are now central to the strategies of many international development agencies. Goal 2 deals directly with education; Goals 3 and 6 have targets or indicators that deal directly with education.

14. Goal 2 is to “Achieve universal primary education” and targets that “children everywhere ... will be able to complete a full course of primary schooling”. The indicators are the net enrolment ratio in primary education; the proportion of pupils starting grade 1 who reach grade 5; and the literacy rate of 15 to 24 year-olds.

15. Goal 3 is to “Promote gender equality and empower women” and targets the elimination of “gender disparity in primary and secondary education ... to all levels of education”. The indicators include the ratio of girls to boys in primary, secondary and tertiary education; and the ratio of literate women to men, 15 to 24 years old.

16. Goal 6 is to “Combat HIV/AIDS, malaria and other diseases”. One indicator is the “ratio of school attendance of orphans to school attendance of non-orphans aged 10 to 14”.

Education for All

17. The World Declaration on Education for All¹ states that every child, youth and adult shall be able to benefit from educational opportunities designed to meet their basic learning needs. That vision was adopted in 1990 and reaffirmed in the "The Dakar Framework for Action"² in 2000. The World Declaration and the Framework set six goals for 2015:

- (a) Expand early childhood care and education;
- (b) Provide free and compulsory primary education for all;
- (c) Promote learning and life skills for young people and adults;
- (d) Increase adult literacy by 50 per cent;
- (e) Achieve gender parity by 2005, gender equality by 2015;
- (f) Improve the quality of education.

18. The Framework emphasizes the importance of monitoring performance using "robust and reliable education statistics" (para. 75) and "the fundamental importance of statistics and the need for credible and independent institutions to produce them" (para. 76).

Organization for Economic Cooperation and Development

19. The Education Directorate of OECD is also a major source of reliable and comparable statistical data and has vision and mission statements that emphasize lifelong learning. To shape its work the Directorate has six strategic objectives:

- (a) Promoting lifelong learning and improving its linkages with society and the economy;
- (b) Evaluating and improving outcomes of education;
- (c) Promoting quality teaching;
- (d) Rethinking tertiary education in a global economy;
- (e) Building social cohesion through education;
- (f) Building new futures for education.

20. There are concerns with these goals, even though there is virtually universal appreciation of the high profile of the Millennium Development Goals and EFA goals and the political commitment and mobilization of resources needed to produce the associated indicators and improve statistical capacity.

21. There is the practical matter of the target date of 2015. By that date, it is realistic to have a good understanding of the systems needed to measure progress and some understanding of the distance still to be covered.

22. More fundamentally, the Millennium Development Goals and EFA goals are not explicitly rooted in a unifying philosophy, and their emphasis on the economic

¹ Adopted by the World Conference on Education for All, held at Jomtien, Thailand, from 5-9 March 1990.

² Adopted by the World Education Forum, held at Dakar, from 26-28 April 2000. Available at www.unesco.org/education/efa.

utility of education and basic education differs from the liberal philosophical views of the commissions sponsored by UNESCO.

23. It may be that some goals need to be revisited. As they are, the Millennium Development Goals emphasize getting into school, and schooling is used as a proxy for what is learned. As important as schooling is, if the policy question is what students have learned then a direct measure of what students know is needed. If policymakers are interested in whether they are meeting targets for learning then an appropriate measure would assess the competencies of the entire population at a certain age, whether or not they are in school.

24. One might also ask whether the Millennium Development Goals and EFA goals reflect the whole of education. They have driven much of the agenda towards basic education at the expense of post-secondary and adult education. They reflect a belief that education serves the economy rather than citizenship and personal development. They omit research which is central to higher education. They differ significantly from the OECD principles to the point that it could be said that the developing and the developed world have separate goals. Millennium Development Goals and EFA deal largely with primary education and literacy. The concern of OECD with high-level skills reflects an interest in improving healthy economies.

25. The difference in goals leads to differences with respect to data. Whereas the developing world is concerned with collecting the data needed to make policy judgements with respect to basic education, the developed world is concerned with statistics dealing with lifelong learning and the knowledge economy.

B. Administrative data collections and survey data

26. Until recently, administrative data have been the main source of data at the elementary, secondary, and post-secondary levels. More recently, surveys have provided data on educational participation and the nature of the school.

27. The two sources have operated in isolation from one another at every stage of the statistical cycle both nationally and internationally. Not surprisingly, the concepts, infrastructures and ways of working that have developed around each type have lead to inertia and biases regarding which type of data is "best". There has been a polarization into the "administrative data collection" and "household survey" camps. One is as likely to encounter a quick, clear, and forceful expression of the reasons why the other source cannot be used as a considered examination of which source might be appropriate and an attempt to reconcile differences.

28. Given the variety of sources, and the differences in purposes, concepts, definitions, and methods, it is not surprising that differences arise, such as the recent concerns over the number of children in school. When there are major differences, the bodies involved need to reconcile their estimates. Is the problem with quality or with the use of different concepts, such as "enrolment" or "attendance"?

29. Agencies also need to recognize that another data source can be used to supplement or confirm its own, and that the strengths of one organization can support another. For example, teams that an agency locates in a particular country or region are likely able to provide insights that can improve another agency's collection and interpretation.

30. *There needs to be a more concerted effort to use both sources. If the major bodies are not able to resolve differences, then a new process may be needed to deal with technical differences. That may involve a new body, perhaps associated with the United Nations Statistics Division, to provide advice.*

C. Multiple surveys

31. Greater coordination among the major household surveys with important education components is desirable. With the exception of DHS and MICS, which share some history and methodology and cooperate in limited ways, any consistency appears largely unplanned since the questions were developed separately by sponsoring bodies for surveys that each has its unique justification. There is no consolidated list of the countries already surveyed and no consolidated schedule showing which countries will be in upcoming surveys.

32. *There could be a greater attempt to bring about consistency, and that effort could involve people who are experts in education. Schedules could be coordinated so that data are collected on a regular basis from the countries where it is most needed. This, however, will not happen without the designation of an explicit coordinating mechanism or organ.*

D. Outcomes surveys

33. Many outcomes surveys have been undertaken in recent years, primarily in developed countries. Since the EFA World Conference in 1990 a new generation of assessments has developed, oriented towards less-developed countries. Like the IEA and OECD assessments, the new assessments described in annex II to the present report provide information that can improve quality and enhance the research and evaluation capacity of national education systems. To the extent that these efforts develop a culture of monitoring and evaluation, they contribute to statistical capacity-building.

34. Depending on your perspective, international comparisons of outcomes may be seen as either powerful tools for improvement or dangerous instruments of change. Statisticians and educators find the surveys to be very worthwhile investments. However, a politician or senior decision maker responsible for the investments needed for such surveys needs to weigh uncertain potential benefits against the certainty that his country will not rank first. It seems only human nature that a low ranking will be acceptable only so many times before a country will withdraw from an international comparison. *The emerging challenge is to provide the benefits that can be gained from international outcomes surveys without the risks likely to follow from the league table publications that result.*

35. The number of outcomes surveys raises concerns with respect to their proliferation, the lack of coordination, the cost and response burden, and the risk of dividing rich and poor nations. The surveys seem to have taken on the proportions of a growth industry. One has the impression that only a few international experts understand the history of the various surveys, the relationships between them, and the justification for carrying out one survey relative to another.

36. Some forces work against cooperation and encourage an increase in the number of surveys. Different perspectives and perhaps competition is built in because IEA represents researchers whereas OECD and UNESCO represent Governments. Furthermore, proliferation may be encouraged by countries that do not have their own national survey in a given area and may believe they are more likely to have an assessment if multiple agencies are involved.

37. Competition can be a good thing since it lets "a thousand flowers bloom". But perhaps there has been enough experience to decide which the stronger options are, or to blend the strengths of the various approaches. As it is, one might conclude that resources are not being used effectively.

38. *IEA and OECD could coordinate outcomes surveys to gain efficiencies and improve service. Funding bodies — countries and international organizations — might ask for greater coordination and tie funding support to cooperation or provide incentives for cooperation.*

39. A concern related to resources is the extent to which national data resulting from international outcomes surveys are used. Some countries analyse their country data extensively and report on performance for region and gender, for example. Other countries rely on the international report with, mainly, just the ranking of countries. Countries may not exploit the data because they do not have the resources, the research skills, or the political will.

E. Leadership, coordination, and division of responsibility

40. The number of organizations with interest in education internationally creates dynamic and creative situations that can also be confusing and wasteful. Organizations talk about collaboration more than they practice it, with the result that there are many coordination issues. In some cases, agencies that claim to be cooperating are doing so at just one stage of the statistical cycle, such as in data collection or training.

41. CCSA is the mechanism for statistical coordination among international agencies. CCSA usually meets biannually to provide a forum for the heads of statistics of international organizations to discuss issues of common concern. CCSA reports to the United Nations Statistical Commission and has addressed topics such as the use of a common international quality assurance framework, and the related issue of metadata exchange.

42. The structure of CCSA limits its ability to coordinate. CCSA is for directors of statistics in international agencies, which excludes those without a director and important agencies that are not international. Not even all agencies that have directors are members. Furthermore, *since CCSA deals with all subjects some other, perhaps subsidiary, structure may be needed that can invest the time needed to coordinate education statistics.*

43. A basic problem of coordination follows from the ways countries assign responsibility for education. Separate ministries may be responsible for different levels of education and for related elements such as finance. Furthermore, whereas interest in primary and secondary education is invariably focused in a ministry, interest in adult education is diverse and spread across several ministries such as agriculture, labour and health. When it comes to collecting and reporting data,

responsibility can rest with a ministry of education or an NSO. This division is reflected in international work.

44. Although responsibility for education rests with UNESCO, other bodies' roles extend to data collection, storage, and dissemination. UNICEF, the World Bank, and others are all involved. Some bilateral aid agencies also maintain extensive data collection programmes.

45. With respect to data collection, there is a divide between the historic concern of UIS with administrative data and other organizations' involvement with survey data. UIS works primarily with education ministries and agencies that deal with surveys work with NSOs.

46. With respect to definitions and classifications, the United Nations Statistical Commission/United Nations Statistical Division defers to UNESCO. With respect to quality, although the Statistical Commission/Statistics Division would seem to be the logical body, IMF has an increasing role. One is left wondering what authority remains with the Statistical Commission/Statistics Division. *Even in the case of fundamental statistical capacity-building work, one might expect the Statistics Division to provide more global support to statistical data collection, analysis, and dissemination.*

47. In OECD, the use of committees to deal with INES has led to impressive results. At the same time, the committees can duplicate one another's efforts and stimulate so much activity that it is a major effort for countries to participate and stay abreast of developments. As well, it can strain even OECD countries' resources to participate in the various surveys, especially when they may want to participate in IEA surveys as well.

48. *Electronic databases and the Web are powerful tools for sharing information that could be used more extensively. IHSN is a useful model that might be adapted to a wider range of activities and players. The search capability of the inventory should make it possible to identify surveys by name, content, and key players.*

49. *The same or a similar mechanism would be useful to exchange information on programmes and activities in statistical capacity-building, whether they involve international agencies and more than one country or are bilateral programmes involving a donor country and the country receiving assistance.*

50. *System-wide thinking and action such as UIS efforts to integrate LAMP with ALL and ALO with PISA is to be encouraged, as is the idea that LAMP might be used as a module of the DHS survey.*

51. Not only do these new surveys reflect some systems thinking, but they also reflect the latest development in measuring literacy. The earliest and simplest estimates used the level of education completed as a proxy for ability to read. Next, surveys ask whether a person is able to read and write. Modern literacy surveys collect assessment (rather than self-declared) data that yield information on a spectrum (rather than dichotomous) of literacy in the population.

F. Response burden — what is “core”?

52. The UOE data collection reduces duplication and the resulting response burden for the countries involved. Nonetheless, volume, frequency, and complexity remain issues that are complicated by definition and process issues.

53. Administrative data on the number of students and graduates, on the number of teachers, and on revenues and expenditures have long been considered “core” information on the operations of an educational system. There is a growing acceptance that outcomes data from surveys of what graduates or the population as a whole knows or is able to do are also “core”. The volume and complexity of annual requests represent a considerable burden on developed as well as developing countries.

54. To add to the burden, countries receive requests that duplicate the UOE collection, either from other organizations or parts of OECD that are not responsible for the UOE collection. Such duplication suggests either that systems are not adequate to ensure they are dealt with before new requests are made, that the existing data holdings are not well known, or that there are problems with access to the data.

55. The outcomes surveys undertaken by OECD and IEA draw resources away from basic administrative data collections. Some countries are unable either to obtain sufficient resources or to target resources so that people and systems are in place to report. Examples would include the lack of proper concordances to international standards, and the lack of information on all of the areas requested by UOE. Some countries’ administrative data collections have been cancelled, gotten years behind, or been allowed to degenerate yet respond easily to household surveys.

56. *While these problems need to be addressed by the countries involved, international agencies could:*

(a) *Temper their requests for data so as to avoid the danger of overwhelming countries’ abilities to respond. UOE might even consider whether an annual survey is necessary;*

(b) *Consider new initiatives carefully, not just whether the data are really needed but whether the same or sufficient data have already been collected or will soon be collected by another organization or in a separate survey;*

(c) *Prepare a comprehensive list of the core variables countries need to be part of major international data collections. Ideally, such a list would indicate the importance of each variable so that countries could concentrate on data collections appropriate to their resources;*

(d) *Periodically review the major data collection instruments with a view to systematizing the information being collected and the way in which it is collected. The review would include the instruments used by UOE, DHS, MICS, LSMS, and CWIQ. The outcome should be a draft standard for consideration by the data collection bodies.*

57. No list of core variables exists. With more attention to what is “core”, countries would have time to catch up on overdue submissions and improve systems for consistent annual reporting. The implementation of ISCED is an example of the challenges. Some countries require significant support from international agencies to fit their programmes into ISCED, and some developed countries have never

prepared correspondence tables that systematically present how, where, and to what extent concepts and categories in one classification may be found in another, or in earlier versions of the same classification.

58. A review of instruments and preparation of a list of core variables need not involve extensive in-person consultations or take too long. It can be done with a review of documentation that can be obtained electronically. The suggestion that importance be attached to variables is similar to the direction taken by ILO, which distinguishes stages of statistical development (basic, secondary and advanced), recommends priority activities for each stage, and identifies "best" and "acceptable" sources in its recent statistical capacity-building materials.

G. Definitions and classifications

59. Fundamental problems include the lack of an accepted definition and classification of universities and with measuring continuing education, as reflected in OECD, UNESCO and Eurostat initiatives. ISCED itself is limited. Developed and developing countries have difficulties mapping their education systems to ISCED, perhaps reflecting ISCED origins as a classification for the developed countries of Europe.

60. A technical difficulty is that even when there is a good fit with ISCED, sometimes neither survey nor administrative sources provide the detail needed for classification. Other challenges are identified in documents prepared for the INES Technical Group and its networks or in appendices of EAG, which notes countries' problems with trying to fit their reality to the definitions and classifications.

61. In spite of these concerns that suggest underlying concepts and thus the data may be questionable, a great deal of energy is devoted to the development or refinement of indicators to make comparisons that have serious policy implications.

H. Process

62. The UOE documentation is a reference point for the international education community. Nonetheless, there are issues with respect to documentation, collection, indicator construction, and verification. The accumulation of sometimes minor points can make important differences in overall statistical reporting and response burden.

63. Either countries or UOE periodically change definitions or procedure that lead to changes in data and indicators. Although publications document changes, these are lost over time so that users are unable to identify the reasons for changes.

64. Changes can lead a country to discover some longstanding omission and create problems in data collection. Changes can have significant resource implications, especially when historical revisions are involved. The collection tools provided and the administration of the requests may also be problematic.

65. Complaints that the UOE data collection is not sufficiently transparent likely arise because countries do not have the algorithms OECD uses to construct indicators. This leads to the sense that OECD may even estimate missing data without making the estimation rules known.

66. Verification is time-consuming since OECD editing routines may have built-in changes that could go unnoticed, especially when there are staff changes or not enough time to review the voluminous annual documentation. OECD requests data from sources other than the centres of expertise for education, which find it difficult to reconcile submissions because they were not aware of the other requests.

67. *Systems for documenting changes and editing rules need to be considered as part of the review discussed earlier. Consideration needs to be given to including editing rules and major changes in reporting software. These changes would help countries with staff training.*

I. Data quality and capacity-building

68. International statistics rely on the ability of countries, state and local bodies to provide statistics on their educational systems and on the learning outcomes of their populations. Collectively, international organizations make significant investments to help countries with fragile statistical systems to develop sustainable capacity.

69. At its most general, statistical capacity-building involves helping countries develop effective statistical systems, including appropriate institutional and legal frameworks; the appropriate core values such as confidentiality and privacy; non-political objectivity; approaches to assessing priorities, whether government or other users; and mechanisms to coordinate the various parts of a statistical system.

70. Statistical capacity-building efforts tend to emphasize producing statistics at the expense of using statistics. However understandable this may be, it would be in the long-term interests of organizations that collect statistics to involve users as well as providers of statistics. This would strengthen the relationship between users and producers, improve the quality and relevance of data, underline the need for the continued support of data collection, and help to create the national demand for data that is essential to develop sustainable statistical supply. In these efforts, it would be advantageous to involve organizations like IIEP that are more accustomed to working with planners.

71. *Organizations that rely on administrative data could work together to develop the skills needed, even across subject areas. Organizations that specialize in surveys could find ways to work together.*

72. Such cooperation may be lacking because bodies that might be expected to go beyond organizational boundaries are either not sufficiently resourced or do not have the mandate. *The aims of PARIS21 need to be fully implemented and backed by appropriate funding.*

73. For the present review, statistical capacity-building involves helping countries to develop and maintain the information needed to manage their educational system. Education management information systems (EMIS) make it possible to provide important services, such as giving graduates a copy of their diploma or former teachers proof of employment.

74. At the simplest level, administrative data provide a count of students in school, preferably by gender, grade level, and age. More complex systems might include information on students' background and store the data electronically by individual so that the history of the student is known and trends can be understood.

75. Some organizations active in statistical capacity-building work primarily with ministries of education. The largest concentration of staff with this responsibility may be in UIS, which has committed a separate section headed by a senior specialist reporting to the Director. Other organizations active in statistical capacity-building work primarily with NSOs.

76. IMF and the World Bank have taken an increasing role in quality and statistical capacity-building. IMF has set standards to ensure that international markets have reliable statistics. Although adherence to those standards is voluntary IMF monitors compliance and is the only international body that undertakes on-site evaluations to ensure compliance. Some observers note that IMF is the only body with the "leverage" needed to bring about adherence to international standards.

77. The World Bank funds statistical development in countries both directly and through other bodies. Countries are encouraged to have national statistical strategies; with one, a country is able to obtain support to develop their statistical systems. The World Bank supported the creation and maintains ongoing support of UIS, especially the development of consultative mechanisms, new survey strategies, and strengthening national education statistics programmes. WEI has been a major such effort since it began in the mid-1990s when the World Bank provided funding to UIS and OECD to help countries develop their statistical systems so that they are able to report comparable statistics. Under WEI, UIS and OECD have worked with 19 countries.

78. UIS uses an evaluation model that begins with the IMF data quality assessment framework (DQAF), specifically its structure for assessing practices and its dimensions and prerequisites of data quality. UIS trains country staff to use DQAF and works with them to prepare a public review of the systems in place at the school, regional and national levels. The identification of weaknesses at each stage of the statistical cycle forms a roadmap for the statistical capacity-building efforts needed. This work is facilitated by the decentralized management model UIS uses: two regional offices in Asia-Pacific, three in Africa, and one in Latin America. Other organizations operate out of a world headquarters and offer training and other support on an ad hoc basis in various parts of the world.

79. The IMF data quality assessment framework may provide a tool to focus coordinated efforts. The use by UIS of the tool to methodically raise issues and prepare assessments that include options and priorities seems to work well. If other agencies were to use the same model then there would be a built-in consistency to the advice being offered. The next step would be for international bodies to work together in dealing with the same agencies in a given country.

80. *It would be useful for UIS to take the lead in documenting overall guidance on education statistics.* In education, the Association for the Development of Education in Africa may have related materials. Justice statistics has a particularly comprehensive model. The guidance would include the variables identified and prioritized, as discussed under "What is core" above (see sect. F), and would recommend whether the appropriate source for each is administrative or survey.

81. A special note on EMIS software is in order since some attempts to develop software appropriate to developing countries have been abandoned and current attempts may be having difficulties. These efforts may have been too much for single agencies, may not have been integrated with the infrastructure capacity of the

countries involved, may have duplicated other attempts, or may have been made obsolete by software changes.

82. In the developed world, such problems have been solved by using software developed and maintained by specialized private companies. Such a solution may apply in the developing world. Even if incentives had to be offered to compensate private companies for working in a small market, these incentives would likely be less costly than the existing approach. Partnered with an international organization that understands the issues facing schools in developing countries, companies would likely be able to adapt one of the emerging systems into an appropriate and robust system that could have wide application.

83. *An international body might ask private sector companies that specialize in EMIS software to partner with the developers of an emerging software solution on software for use in the developing world. Such a company might be from an emerging economy. Responsibility for ongoing maintenance, upgrades, and training might rest with the consortium.*

J. Privacy and confidentiality

84. Administrative data collections and surveys collect significant amounts of personal information that many cultures consider private, given on the understanding that it will be handled in confidence.

85. Many statistical agencies have policies and procedures to maintain confidentiality. Nonetheless, the issues of confidentiality grow more pressing as technology makes it easier to collect, store, link, and disseminate information. These issues grow more complex when data collected in one jurisdiction are being used in another jurisdiction.

86. Various factors make confidentiality a complex issue at the international level. Countries vary in their capacity to undertake analyses, and some countries rely on international bodies to undertake even the national analyses. Cultures vary in the importance they place on privacy and confidentiality, and some may not have the capacity to guarantee minimal levels of confidentiality even when they want to do so. Countries that have the resources and that place a high premium on confidentiality may not share a common standard of legal and procedural systems to ensure confidentiality.

87. The practices of international and bilateral aid agencies also raise issues. Microdata might be held either by the international or bilateral agency responsible for the survey or by the country where the data were collected. The former reduces burden on the country and facilitates research and report writing that involve international comparisons. The latter means that authors of international reports depend on the ability and willingness of the country to do analyses. After the report is written, international bodies and researchers have access to microdata files only if the country or agency makes available such files and they are consistent with other countries' files.

88. If the microdata are held by an international or bilateral aid agency, then the international community needs to address various questions: *should an international authority oversee the way in which data are handled, perhaps including agreements to deal with confidentiality?*

K. Dissemination: accessing and using data

89. Traditionally, education statistics have been detailed tabulations and databases with limited audiences. Enormous changes in the sophistication and use of hardware and software, however, have meant that books of statistical tables are being replaced by data on the Web. Coupled with the increasing interest in data and indicators, statistical agencies now have an opportunity to make data more accessible, to organize data differently, and to make it possible for users to select their own trends and comparisons for study.

90. Multiple international, regional, and national agencies have or are in the process of developing and maintaining their own databases of international education data, although they draw heavily on the same sources, including core data in the UOE collection. *Given the development and maintenance costs, cooperation is desirable to share scarce resources and facilitate access.*

91. It would be helpful for agencies to provide better information on the origins of that data. Even sophisticated users can find it difficult to navigate the sources and to understand the sometimes dramatic differences in results reported by various agencies. *International agencies could provide a "map" that diagrams the way data move from various sources into the major international databases.* This may be a very appropriate role for either the United Nations Statistics Division or UIS.

92. To be used effectively, data need to be analysed and disseminated systematically. Surveys differ in their emphases. Whereas some surveys result in country reports, perhaps limited to single themes, others result in comparative analyses. *More analytical work is needed to take advantage of the databases from all the surveys. Provided that the confidentiality and privacy issues can be addressed, electronic access will make better use of data that have been gathered at substantial expense.*

L. New pressures — internationalization, trade and commercialization

93. Mobility in higher education is increasing and widening so that mobility now involves secondary education. The pressures creating these changes, such as the emphasis on the centrality of knowledge in society, the internationalization of the labour market and the need for qualifications to be recognized internationally are likely to increase. Further pressure will result from WTO negotiations on trade in services, and GATS, which already includes distance education and satellite campuses in other countries as well as students and faculty studying and working abroad.

94. Coupled with a growing commercial interest in educational services such as training for industry, and the increasing involvement of providers such as professional organizations, NGOs, and private companies, it is reasonable to expect these pressures to significantly increase mobility even further.

95. Although some data are available on the mobility of students, there are virtually no data on programmes and providers. A special data gap exists on commercial activities, which some observers believe is increasing very significantly at the same time as there is a blurring of lines between public and private involvement in education.

96. The lack of data on private, commercial involvement in education goes beyond international activities. Very little data are available on countries' domestic commercial educational activities.

97. These are areas where a conceptual framework would make clear what data are needed and missing.

III. Conclusions and recommendations

98. International education statistics is such a vast field that the present review must be considered preliminary. While the review suggests the richness and diversity of the information on education and learning, it also points to the lack of shared conceptual foundations and limited cooperation. These fundamental concerns cause unnecessary duplication, response burden, and a lack of clarity of purpose. It is our opinion that international education statistics would benefit the most from developments in those two areas.

99. While numerous other issues and suggestions are made in the body of the present report, the following recommendations have top priority and highest urgency:

(a) To develop a comprehensive conceptual framework for international education statistics. The framework would build on what currently exists in international agencies and national offices and would suit the needs of both developed and developing countries;

(b) The conceptual framework forms the basis from which a core set of indicators could be identified. The core indicators would need to be identified by level of importance and by appropriate source. The framework and list of core indicators would foster cooperation and facilitate capacity-building by setting clear directions on priorities;

(c) The United Nations Statistical Commission creates an international task force with a mandate to develop, within 12 months, the comprehensive conceptual framework for international education statistics.

Annex I

The nature of education statistics

1. Some fundamental concepts are useful in dealing with education statistics.

Learning and education

2. Learning is a much broader concept than education. "Learning" emphasizes what individuals learn, regardless of where they learn it, and concerns what happens within an individual. "Education" emphasizes what others — parents, teachers, employers — do to "educate" an individual.

Lifelong education and lifelong learning

3. When the emphasis is on the education of the young, data collection focuses on a limited age group and, generally, on the activities of institutions that are well recognized and organized. A focus on schools leads to education statistics concerned with inputs or "exposure" to education. With an emphasis on learning that continues through adulthood, then at the very least one needs to consider the educational activities of a far larger number of institutions that extends to employers and non-profit organizations that are not generally thought of as "educational". Lifelong education and the learning that takes place outside of educational institutions lead to greater interest in outcomes and what has been learned.

4. Beginning, perhaps, in the 1970s many societies renewed their emphasis on the importance of continuing education past the normal age for leaving school. Increasing technological complexity and the increasing rate of change have accelerated societies' need to make provisions for adults to continue to learn. While "continuing education" directly related to employment and the needs of the economy receives most of the recognition, there remains a longstanding recognition of the importance for adults to pursue learning that is not directly related to their work and that allows them to contribute to the betterment of their lives, their families, and their society.

Context, input, process, output and outcome

5. Educational data and indicators can be categorized as describing "context", "inputs", "processes", "outputs" and "outcomes".
6. Context data include information on the socio-economic setting of a student's family and school. Input data include the number of students and faculty, and the amount of money being spent on an educational system. Process data might look at the way in which a school's money is spent or what goes on in a classroom. Output data concern direct results such as the number of graduates. Outcome data concern longer-term results and the ends to which the educational system may contribute; an example would be graduates' contribution to society.
7. Historically, educational measures have emphasized inputs such as the number of students, the number of faculty, and the amount of money and one major output measure, the number of graduates. More recently, public concern with accountability has led to more interest in process and output measures such as the number of graduates who are literate and who find employment.

Data and indicators

8. The terms "data" and "indicators" are sometimes used interchangeably, even though they deal with different concepts.
9. Indicators are a use of data. The confusion between the two terms arises partly because some data can be used as an indicator in its raw form. Examples would be "enrolment at the primary level" or "expenditure on higher education".
10. Data can also be combined to show, for example, enrolment as a percentage of the school-age population, expenditure as a percentage of gross domestic product, teacher/student ratio, and cost/student. In these cases, the term "indicator" is appropriate.

Administrative and survey data

11. Administrative data are collected to administer a programme. Survey data are collected from individuals (people or corporations) to answer special needs usually associated with a research question.
12. Administrative and survey data are usually the responsibility of different agencies. Administrative data are a monopoly held by the office responsible for administering a programme, such as schools and departments of education. Survey data are generally the responsibility of agencies that specialize in collecting data from individuals or households; these are generally NSOs.
13. **Administrative data collections** — Basic data on students, graduates, teachers or faculty, physical infrastructure, and finance usually come from administrative sources. A school, for example, keeps a record of each student, the grade or programme he is taking, his age and gender, and something about his background. The school also records whether and when the student graduates. By the same token, educational systems are able to report the amount of money they receive and spend, how they spend that money, and about the people they hire.
14. Student, staff, and financial data are fundamental for educational planning in their own right and because they can be combined to calculate indicators — such as cost per student and teacher/student ratios — that are very important to planners and decision makers.
15. Administrative data can be collected using "complete counts" or samples. Either way, they are often collected using "surveys" which might ask, for example, for the number of students by level and gender. Such "aggregate" surveys might be in paper or electronic form. The survey might also be a request to provide certain data in "individual record form"; in this case the agency holding that individual data has a powerful database that allows individual student records to be manipulated to answer complex research and planning questions. Whether data are collected in paper or electronic form, and whether they are collected in aggregate or at the individual level, the present report will refer to this source as "administrative data".
16. **Surveys** — When administrative data are not sufficient, researchers use surveys directed at individuals. Whether the individual being interviewed is found in schools, at work, or at home the survey is often called a "household survey". They are also sometimes called "sample surveys", even though all such surveys involve taking a sample except when the entire population is included and it is called a

"census" or a "census survey". Surveys are commonly used to obtain information on outcomes.

Other data used in education

17. Educational researchers make extensive use of other data such as surveys of population, public finance and health. Population statistics provide the background against which all institutions in society function. Given the total population (of school age, for example) and the total enrolment in an educational system, one can calculate the percentage of the (school age) population being served. Given the number of people employed in major industries and occupations then one can begin to predict the need for graduates with certain skills. Given information on families and the nutrition and health of the population, one can begin to appreciate the difficulties experienced by various populations and to develop school programmes that target problems.

Annex II

Major players and initiatives, their mandates and programmes

1. The present annex provides background on agencies whose general responsibilities influence education statistics. It then outlines agencies that have a long-standing and major presence in international education statistics and initiatives that resulted from the greater demands for reliable data following acceptance of the Millennium Development Goals and EFA. Early work on those goals identified so many issues that an international round table in 2004 resulted in "The Marrakech Action Plan for Statistics"^a and new ideas for helping countries improve their statistical programmes. These initiatives include IHSN, PARIS21, and the encouragement by the World Bank of national statistical strategies. The increased attention also contributed to the work of IMF on dissemination standards and quality frameworks. Regional networks that undertake surveys of educational outcomes are also identified.

United Nations Statistical Commission

2. The United Nations Statistical Commission, supported by the United Nations Statistics Division, has pivotal roles. It published "Fundamental Principles of Official Statistics"^b to assist in the creation of national statistical institutes; the "Declaration of Good Practices in Technical Cooperation in Statistics"^c to guide partners and donors that deliver technical assistance to countries; and "Principles Governing International Statistical Activities"^d to guide the work of international agencies. A fundamental part of the work of the Statistical Commission is to deal with classifications. ISCs require approval by the Statistical Commission or another competent intergovernmental board. In the case of education, UNESCO is the custodian of the classification and endorsed ISCED in 1976. Since then, ISCED has been used to describe student (enrolments and graduates), finance (revenue and expenditure), and personnel (teachers or faculty) data.

Committee for the Coordination of Statistical Activities

3. CCSA is the mechanism for statistical coordination among international agencies. The Committee usually meets bi-annually to provide a forum for the heads of statistics of international organizations to discuss issues of common concern. CCSA reports to the United Nations Statistical Commission and has addressed topics such as the use of a common international quality assurance framework, and the related issue of metadata exchange.

The International Monetary Fund and the World Bank

4. IMF was established to promote international monetary cooperation and exchange stability; to foster economic growth; and to provide temporary assistance

^a Presented to the Second International Round Table on Managing for Development Results, held at Marrakech, Morocco, from 4-5 February 2004. Available at <http://unstats.un.org/unsd/>.

^b Adopted at the special session held from 11-15 April 1994. Available at <http://unstats.un.org>.

^c Endorsed at the thirtieth session held in March 1999.

^d Endorsed by the Committee for the Coordination of Statistical Activities on 15 September 2005. Available at <http://unstats.un.org>.

to help countries with balance of payments adjustments. The Fund's operations have evolved to include work on the quality of data so that international markets will have reliable statistics.

5. IMF has three interrelated standards (SDDS, GDDS, and DQAF) that prescribe fundamental rules of behaviour for statistical offices and provide guidance for the broad development of macroeconomic financial and socio-demographic data. With respect to socio-demographic data — which specifically includes education — IMF collaborates with other international institutions to develop good practices.

6. IMF works with the World Bank — the world's largest external financier of education — to support Governments in the development of their strategies. IMF advises Governments in the areas of its traditional mandate, including promoting prudent macroeconomic policies. The World Bank takes the lead in advising on the social policies involved in poverty reduction.

7. Diagnosing obstacles to reducing poverty and monitoring progress towards that goal requires data and mechanisms to share the information that results. As part of its work, the World Bank funds statistical development in countries.

United Nations Educational, Scientific and Cultural Organization — UNESCO Institute for Statistics

8. UNESCO has various Institutes and Centres that specialize in education, including UIS and IIEP.

9. UIS was created in 1999 to establish current and emerging needs for statistical data and indicators; to improve the collection, dissemination and use of comparative international statistics; and to build statistical capacity in member States. UIS has become the guardian for cross-national data on education.

10. The core of the work of UIS has been annual collection from each country of administrative data dealing with students and graduates, finance, and staff. These surveys provide the database for the calculation of indicators and as the basis for publications. UIS data are used by virtually all international agencies and bilateral agencies.

Organization for Economic Cooperation and Development

11. OECD works on a bilateral basis with 80 non-member countries, although it works on education with fewer than half of that number. The OECD programme includes INES and PISA. Other OECD activities are concerned more with the use of statistics than with obtaining them.

12. Countries that have the statistical capacity and wish to do so "join" INES by paying an annual fee and attending meetings. The commitment is considerable. Presently, INES includes OECD member countries and five non-member countries. For these, INES collects, cleans, and organizes the data that are used in UNESCO, OECD, and Eurostat publications. The findings are published in the annual EAG and the database is available on CD-ROM and the Internet as an interactive online database.

13. Much of the INES work is done by a Technical Group and three country-sponsored networks. The Technical Group is made up of all OECD member countries, Eurostat, UNESCO, and ILO and is primarily concerned with

administrative data on finance, human resources, access, participation, and graduation. The networks use primarily household survey data. Network A is concerned with educational or learner outcomes; Network B with labour market outcomes, school-to-work transitions, and adult learning; and Network C with schools as the learning environment and school processes and organization. PISA grew out of the INES Network A's work and now operates as a separate activity.

United Nations Children's Fund

14. The responsibility of UNICEF for children leads naturally to education. UNICEF is the lead agency for monitoring the child-related Millennium Development Goals, and it is partly that responsibility that has led it to initiate the major survey — MICS — on the condition of children.

International Association for the Evaluation of Educational Achievement

15. IEA is an independent cooperative of research centres created to conduct comparative studies of educational policies and practices. IEA is committed to a cycle of studies in basic school subjects and to additional studies of particular interest to its members, consisting of educational systems in 59 countries. All but six of these are either members of OECD (31) or are identified by the OECD as "non-members" (22).

16. IEA is financed by contributions from the World Bank and fees countries pay to participate in each survey.

United States Agency for International Development and ORC Macro

17. Many countries provide support to developing countries' educational systems. USAID is identified in this report because it undertakes the DHS surveys, which have a major educational component. The surveys are undertaken under contract by ORC Macro, a firm that provides survey research, policy analysis, evaluation, training, and other services.

International Household Survey Network

18. IHSN was launched to foster collaboration to maximize the value of survey information. The Network arose from the recognition that complexity and cost makes it difficult to sustain and maintain the quality of household surveys. IHSN encourages the efficient collection and use of more and better data.

19. IHSN has developed a central Web-based archive, managed and maintained by the World Bank, that provides access to information on major surveys both completed and planned.

PARIS21

20. PARIS21 is a consortium of policymakers, analysts, and statisticians supported by OECD, the World Bank, the European Commission, IMF, and the United Nations. The consortium fosters dialogue among producers and users of development statistics and promotes evidence-based policymaking and monitoring, especially in poor countries. It aims to help develop well-managed and supported statistical systems.

Latin American Educational Quality Assessment Laboratory

21. LAEQAL (also referred to as the Latin American Laboratory for Assessment of the Quality of Education, the Latin American Laboratory for Assessment of Educational Quality, "Laboratorio", and often found under its Spanish acronym of LLECE) was created under UNESCO auspices in 1994 to field a comparative regional assessment of educational outcomes. Comparative studies of third and fourth grade students in language and mathematics have been undertaken.

South African Consortium for Monitoring Educational Quality

22. SACMEQ (also referred to as the South and Eastern African Consortium for Monitoring Educational Quality) is a network created in 1995 primarily to provide joint training related to monitoring and evaluation for staff in 15 ministries of education in southern and eastern Africa. SACMEQ has collected data on student outcomes in reading and mathematics and provided technical support in monitoring and evaluation systems. SACMEQ began when IIEP began working with ministries of education in the region to train educational planners in one nation to study the quality of education. That work was extended to seven ministries to assess reading and literacy, and then to more countries and to mathematics.

Conference of Francophone Ministers of Education

23. The 54 CONFEMEN countries have run the PASEC surveys.

Annex III

Sources of educational data

1. In addition to administrative data, international bodies have access to data from surveys which were created for purposes other than education, which measure education outcomes, and which provide context. This survey data may go to a regional or international body for analysis before it is returned to the country.

UOE

2. UOE jointly collect administrative data on an annual basis to describe school systems and progress through the schools. This collaboration began in 1995 when the three separate data collections were merged, partly to standardize data requirements, definitions and methodologies. In theory, OECD and the European Union survey and process data from their member countries while the UIS surveys and processes data for the remaining countries that are members of UNESCO.

3. Although the three organizations differ in the subject matter covered and definitions, a common core of data requirements and ISCED coding make it possible for UIS to compile standard tables for international reports. The data collected by OECD goes into the INES database and appears in print as *Education at a Glance*.

Surveys with important educational components

4. These surveys arose from research questions that used education as explanatory variables rather than as the focus of attention. DHS started with a fertility survey; MICS arose from child health; LSMS from economic/poverty issues; and CWIQ was developed to monitor social indicators in Africa.

5. Educational data from these surveys can support traditional administrative sources. Uniquely, the household data these surveys collect and store along with education data provide a context for policy and programme planning. Further, the surveys have been repeated often enough that trends can be found. The surveys use a modular design so that they can be adjusted to the needs of particular countries and are undertaken at the request of particular countries. DHS has been undertaken since 1973, primarily in countries receiving USAID support. UNICEF began MICS in 1994 to help developing countries monitor the situation of children. USAID and UNICEF cooperate on funding, questionnaire construction, timing, and data collection. DHS and MICS have surveyed or are in the process of surveying 83 and 54 countries, respectively.

6. LSMS was developed by the World Bank, and since 1985 more than 60 surveys have been undertaken in 43 countries.

7. CWIQ was developed by the World Bank, UNDP, UNICEF and ILO to monitor social indicators in Africa.

Outcomes surveys

8. Surveys of educational outcomes have been undertaken through IEA, OECD, ETS, Statistics Canada, UNESCO, UIS, and regional associations.

9. All such surveys directly assess individual's skills and/or knowledge, mostly in reading, writing, or numeracy, and have different target populations and countries. Some surveys assess mastery of the school curricula while others assess the knowledge and skills needed to manage in life. The assessments have begun to collect background data on students and context data to study factors related to achievement.
10. In 1959-1960 IEA conducted a feasibility study that led to studies of mathematics, science, reading, and composition. In 1971 the methods were refined in the six-subject survey. These two studies led to much of the IEA work that followed.
11. IEA began the Trends in International Mathematics and Science Study (TIMSS) as the First and Second International Mathematics Study (FIMS in 1964 and SIMS in 1982) and the Second International Science Study (SISS in 1982). TIMSS is now conducted on a four-year cycle.
12. In 1984 IEA undertook the international study of achievement in written composition to examine associated variables, especially cultural background, curriculum, and teaching practices. The study included students near the ends of primary schooling, compulsory schooling, and academic secondary school.
13. In 1990 IEA undertook the Reading Literacy Study that refined the definition and assessment instruments. That work led to the Progress in International Reading Literacy Study (PIRLS), intended to operate on a five-year cycle that began in 2001. PIRLS complements TIMSS and the OECD's PISA.
14. In 1999, IEA undertook the Language Education Study, although funding difficulties meant that only Phase 1 was completed.
15. In 2000, OECD developed PISA to assess reading, mathematics, and science on a three-year cycle. Every cycle is to provide a more detailed look at one of reading literacy, mathematical literacy, and scientific literacy.
16. Studies have gone beyond reading, writing, mathematics, and science. In 1999, IEA undertook the Civic Education Study (CivEd), which led to the International Civic and Citizenship Education Study (ICCES) in 2006. These studies provided comparative data on ninth-graders' knowledge of national identity, international relations, and social cohesiveness and diversity. In 1989 IEA began a study of information technology/computer in education (COMPED), which led to the Second Information Technology in Education Study (SITES) in 2004.
17. In 1988 ETS began the International Assessment of Educational Progress (IAEP) to assess achievement in mathematics, science, and geography.
18. A series of surveys undertaken by partnerships involving Statistics Canada, UNESCO, NCES, ETS, and OECD have set out to measure the skills adults need to succeed. ALL, undertaken in 2003, built on the International Adult Literacy Survey (IALS), begun in 1994, and the Second International Adult Literacy Survey (SIALS), conducted in 1997.
19. The newest generation of adult literacy surveys is being piloted by UIS as LAMP, which has been designed to enable comparisons with countries that use IALS and ALL instruments. As well, a "LAMP Lite" is planned for countries with

very low levels of educational attainment and fewer resources. The hope is that this can be used as a module in the DHS surveys.

20. At the same time, OECD is proposing the Programme for the International Assessment of Adult Competencies (PIAAC) for implementation between 2008 and 2010. PIAAC would include elements of IALS and ALL, enlarge the coverage of countries, and would be repeated on a five-year cycle. Actual content is still under discussion, although it seems there is agreement on the policy issues to be covered.

21. In 1992, as a follow-up to the EFA conference UNESCO and UNICEF started the Monitoring Learning Achievement survey (MLA). Following a recent assessment, discussions are leading to a decision to replace MLA with ALO, being developed by UIS. ALO will be to those under 15 years of age what LAMP is to those 15 years of age and older. As conceived, ALO will be structured so that it can be linked to LAMP to make comparisons across age levels and to PISA to make comparisons with countries using that assessment.

22. Regional associations have also initiated surveys of educational outcomes. In 2005 LAEQAL fielded the Second International Comparative Study of Language and Mathematics (SERCE), following the first such study in 1997. Starting in the early 1990s CONFEMEN countries began the PASEC surveys.

Context surveys

23. Some surveys undertaken by international organizations provide a context. In 1980 IEA began the Classroom Environment Study, a longitudinal attempt to identify teaching behaviours associated with student achievement in mathematics, science, and history. In 2001, OECD undertook the International Survey of Schools at the Upper Secondary Level (ISUSS) to examine issues such as school management and finance, teacher recruitment, student admission, and the use of information and communication technologies.

24. Two new studies are being proposed. IEA has begun developing a Teacher Education and Development Study-Mathematics (TEDS-M) to examine how teacher preparation policies, programmes, and practices contribute to the teaching of mathematics and science. OECD has proposed a survey of teachers, teaching and learning (TALIS), designed to be linked to PISA. Although they appear to overlap, IEA notes that the "projects complement each other and are very different".

University "League Tables" — a special case

25. There are also attempts to rank university-level institutions or faculties such as business, law, and medicine. Although some dismiss the rankings on the grounds that they are undertaken by or have private sector involvement and more generally on the grounds of statistical quality, the number of such rankings is growing and they are important in the international mobility of students.

26. As well, there may be some models in this work. Doing the rankings with relatively limited resources and using the Web so individuals can construct their own rankings using their own weights may accelerate the demand for such data.

Annex IV

Acronyms

ALL	Adult Literacy and Lifeskills Survey
ALO	Assessment of learning outcomes
CCSA	Committee for the Coordination of Statistical Activities
CONFEMEN	Conférence des ministres de l'éducation ayant le français en partage (Conference of Francophone Ministers of Education)
CWIQ	Core Welfare Indicators Questionnaire
DHS	Demographic and Health Survey
DQAF	Data Quality Assessment Framework
EAG	Education at a Glance
EFA	Education for All
EMIS	Education management information systems
ETS	Educational Testing Service
Eurostat	Statistical Office of the European Communities
GATS	General Agreement on Trade in Services
GDDS	General Data Dissemination System
IEA	International Association for the Evaluation of Educational Achievement
IHSN	International Household Survey Network
IIEP	International Institute for Educational Planning
ILO	International Labour Organization
IMF	International Monetary Fund
INES	International Indicators of Education Systems
ISC	International statistical classification
ISCED	International Standard Classification of Education
LAEQAL	Latin American Educational Quality Assessment Laboratory
LAMP	Literacy Assessment and Monitoring Programme
LSMS	Living Standards Measurement Study
MICS	Multiple Indicator Cluster Survey
NGO	Non-governmental organization

NSO	National statistical office, agency, institute, or centre
OECD	Organization for Economic Cooperation and Development
PARIS21	Partnership in Statistics for Development in the 21st Century
PASEC	Programme for the Analysis of Educational Systems of the CONFEMEN Countries
PISA	Programme for International Student Assessment
SACMEQ	South African Consortium for Monitoring Educational Quality
SDDS	Special Data Dissemination Standards
UIS	UNESCO Institute for Statistics
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UOE	The data collection administered jointly by UIS, OECD and Eurostat
USAID	United States Agency for International Development
WEI	World Education Indicators programme
WTO	World Trade Organization
